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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/364,308	07/30/1999	CAO THANH PHAN	Q55268	9268

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EXAMINER

SHAH, CHIRAG G

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 08/04/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

10

# Office Action Summary

Application No.

09/364,308

Applicant(s)

PHAN ET AL.



Examiner

Chirag G Shah

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 5-9 and 14-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Patent No. 6,122,283) in view of Putzolu (U.S. Patent No. 6,359,902).

Referring to claims 1, 2, and 4, Lee teaches of compressed topology aggregation of a group of switching nodes and interconnecting links. Lee further teaches in figure 3 and claim 1 and respective portions of the specification of routing between a source node and a destination node network having nodes connected by links, compression is used on at least one of the links. Lee teaches in column 5 of performing at least 2 calculations such as Dijkstra and Floyd-Warshall methodologies for deriving the compressed topology aggregation of figure 3. The Dijkstra methodology is used to determine shortest paths from a given vertex to all the vertices and the Floyd-Warshall determines shortest paths from each vertex to every other vertex. Thus, the method performs at least two routing calculations for a given number of compressions, routing calculation comprising a first routing information for a number of compressions less than said given number, and a second routing calculation for given number of compression using obtained from the first routing calculation as claims. Lee further teaches in column 5 lines 35 to column 6 lines 47 that the method further comprises choosing a cost or metric function wherein

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the routing minimizes the cost function as claims. Lee as disclosed before teaches in column 5 of a routing calculation for a given number of compressions uses the Dijkstra algorithm and verifies the number of compressions when adding a node to the routes as claims. Lee fails to explicitly disclose that performing at least two routing calculation for a given number of compression is of signal compressions. Putzolu teaches of routing between a source node to a multiple destination nodes in a network having nodes connected by links as illustrated in figures 1, 2, and 4 and respective portions of the specification. Putzolu further discloses in figure 8 and respective portion of the specification that subgroup XYZ-1 provides a compressed signal link and is routed and utilized to save bandwidth and allow the multicast group XYZ to be accessed via low bandwidth data link. In addition, sub-group XYZ-2 provides a less compressed signal than sub-group XYZ-1, thus the associated higher bandwidth is handled by high bandwidth data link. Thus, implying that the two routing calculations as implemented in Lee's invention with respect to compressed topology aggregation of a group of switching nodes and interconnecting links may be implemented with a compressed signaling link. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lee to include the teachings of Putzolu in order to increase efficiency and save bandwidth by routing a link having compressed signal via low bandwidth data link.

Referring to claims 3, Lee teaches in claims 2, 9, and 10 and respective portions of the specification of a routing calculation for a given number of compressions comprises at a node where the number of compressions from the source node is equal to the given number, seeking and saving for a subsequent routing calculation adjacent links on which compression is used as claim. Lee fails to explicitly disclose that performing at least two routing calculation for a given

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number of compression is of signal compressions. Putzolu teaches of routing between a source node to a multiple destination nodes in a network having nodes connected by links as illustrated in figures 1, 2, and 4 and respective portions of the specification. Putzolu further discloses in figure 8 and respective portion of the specification that subgroup XYZ-1 provides a compressed signal link and is routed and utilized to save bandwidth and allow the multicast group XYZ to be accessed via low bandwidth data link. In addition, sub-group XYZ-2 provides a less compressed signal than sub-group XYZ-1, thus the associated higher bandwidth is handled by high bandwidth data link. Thus, implying that the two routing calculations as implemented in Lee's invention with respect to compressed topology aggregation of a group of switching nodes and interconnecting links may be implemented with a compressed signaling link. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lee to include the teachings of Putzolu in order to increase efficiency and saving bandwidth by routing a link having compressed signal via low bandwidth data link.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim10-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Putzolu as applied to claim1-4 above, and further in view of Gittins (U.S. Patent No. 5,638,363).

Referring to claim 10, 11, and 13, as disclosed before, Lee in view teaches of compressed topology aggregation of a group of switching nodes and interconnecting links. Lee in view of Putzolu further teaches of routing between a source node and a destination node network having nodes connected by links, compression is used on at least one of the links. Lee in view of Putzolu further teaches performing at least 2 calculations such as Dijkstra and Floyd-Warshall methodologies for deriving the signal compressed topology aggregation of figure 3. The Dijkstra methodology is used to determine shortest paths from a given vertex to all the vertices and the Floyd-Warshall determines shortest paths from each vertex to every other vertex. Thus, the method performs at least two routing calculations for a given number of compressions, routing calculation comprising a first routing information for a number of compressions less than said given number, and a second routing calculation for g given number of compression using obtained from the first routing calculation as claims. Lee in view of Putzolu further teaches the method further comprises choosing a cost or metric function wherein the routing minimizes the cost function as claims. Lee in view of Putzolu as disclosed before teaches of a routing calculation for a given number of compressions uses the Dijkstra algorithm and verifies the number of compressions when adding a node to the routes as claims. Although it is known in the art that the Dijkstra's algorithm can be performed with compression or without compressions, Lee in view of Putzolu fails to explicitly teach of performing a first routing calculation with no compression. Gittins discloses in column 4 where bandwidth manager performs calculation that detects the overflow conditions without compression and provides a means for compressing the data via second complementary bandwidth managing device. Thus, the two calculations as disclosed by Lee and Gittins respectively can be used for routing calculation for given number of

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compressions and overflows conditions. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lee in view of Putzolu to include the teachings of Gittins in order to efficiently route compressed links using the most optimal cost functions.

Referring to claim 12, Lee teaches in claims 2, 9, and 10 and respective portions of the specification of a routing calculation for a given number of compressions comprises at a node where the number of compressions from the source node is equal to the given number, seeking and saving for a subsequent routing calculation adjacent links on which compression is used as claim. Lee fails to explicitly disclose that performing at least two routing calculation for a given number of compression is of signal compressions. Putzolu teaches of routing between a source node to a multiple destination nodes in a network having nodes connected by links as illustrated in figures 1, 2, and 4 and respective portions of the specification. Putzolu further discloses in figure 8 and respective portion of the specification that subgroup XYZ-1 provides a compressed signal link and is routed and utilized to save bandwidth and allow the multicast group XYZ to be accessed via low bandwidth data link. In addition, sub-group XYZ-2 provides a less compressed signal than sub-group XYZ-1, thus the associated higher bandwidth is handled by high bandwidth data link. Thus, implying that the two routing calculations as implemented in Lee's invention with respect to compressed topology aggregation of a group of switching nodes and interconnecting links may be implemented with a compressed signaling link. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Lee to include the teachings of Putzolu in order to increase efficiency and save bandwidth by routing a link having compressed signal via low bandwidth data link.

*Allowable Subject Matter*

3. Claims 5-9 and 14-16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**Any response to this final action should be mailed to:**

**Box AF**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**

(703) 305-9051, (for formal communications; please mark "EXPEDITED  
PROCEDURE)

**Or:**

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(703) 305-5403 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

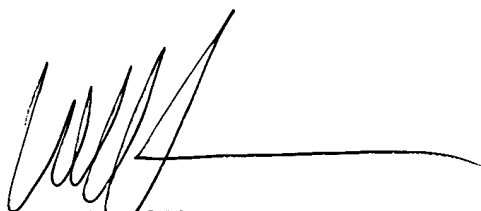
Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 703-305-5639. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

cgs  
July 15, 2003



WELLINGTON CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600